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## A Multistage Sampling Case Study in India of Food Packaging on Buyers' Behavior

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/AJAEES/2019/v31i130124

*Editor(s):*

(1) Dr. Fotios Chatzitheodoridis, Professor, Department of Agricultural Technology-Division of Agricultural Economics, Technological Education Institute of Western Macedonia, Greece.

*Reviewers:*

(1) Murat Akin, Nigde Omer Halisdemir University, Turkey.  
(2) Prof. Gerald Aranoff, Ariel University Center of Samaria, Israel.

(3) Dr. Nguyen Khac Minh, Thang Long University, Vietnam.

Complete Peer review History: <http://www.sdiarticle3.com/review-history/35253>

**Original Research Article**

**Received 11 January 2018**

**Accepted 02 April 2018**

**Published 29 March 2019**

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### **ABSTRACT**

Due to increasing self-service and changing consumers' lifestyles, interest in packaging as a tool of sales promotion and stimulator of impulsive buying is growing. The basic purpose of this paper was to find out how different elements of packaging influence buyer behaviour at different stages of purchasing. Varanasi district (Uttar Pradesh) was selected for the study purposively. The Results showed that all the packaging elements are highly important to consumers' depending on their demographics and these factors can highly influence their purchasing decision.

**Keywords:** *Packaging; food products; buying behavior; eco-friendly packaging.*

### **1. INTRODUCTION**

Packaging is one of the most important factors in purchase decisions made at the point of sale. Packaging is also a key food product attribute perceived by consumers. There is no escaping

the fact that packaging performs marketing function, even if a company does not explicitly recognize the marketing aspects of packaging. In addition with the move to self-service retail formats, packaging increases its key characteristic as the salesman on the shelf at the

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point of sale. The critical importance of packaging design is growing in such competitive market conditions, as the package becomes a primary vehicle for communication and branding. Packaging as defined by the Packaging Institute International is the enclosure of products, items or packages in a wrapped pouch, bag, box, cup, tray, can, tube, bottle or other container form to perform one or more of the following functions: containment, protection, preservation, communication, utility and performance. It may otherwise be defined as a socio-scientific discipline which operates in a society to ensure delivery of goods to the ultimate consumer of those goods in the best condition intended for their use. New packaging systems and materials and environmental concerns are some innovation in packaging sector.

Proper packaging plays a crucial role in increasing the shelf life of the products. Food products specifically require protection from light and oxygen to prevent oxidation during storage. Innovations in packaging have become the order of the day and are used as a strategic marketing tool to launch, re-launch, reposition, and increase demand for its products and services [1,2]. Interest in the development of sustainable packaging has increased in recent years, with several programs and initiatives having been instigated to improve the sustainability of packaging [3]. The package is a critical factor in the decision-making process because it communicates to consumers. The package design must ensure that consumer response is favourable. However, several conflicting trends in consumer decision making have made the food design challenging. Some consumers are paying more attention to label information, as they become more concerned about health and nutrition issues. Others have focused attention to the eco-friendliness of packaging. In the household consumption, groceries account for a substantial share, and up to one-third of the environmental impact is mainly due to packaging materials [4]. This trend seems to be catching in India, which is generating waste products at a rather alarming rate, much faster than the natural degradation process and is using resources at a speed that exceeds the rate at which these materials are being replaced [5]. However, Indian consumers are more conscious of their environmental impact than consumers from Brazil, China, Australia, Russia, Canada, America and Germany [6]. Most of the Indian consumers have a positive attitude towards eco-friendly packaged product and are ready to pay

premiums for it. However, packaging sector should always add some new features to make packaging more sustainable. It has to increase the likelihood of consumers to choose sustainable packaging during product purchase. In the developing countries like India the packaging sectors should always pay attention to the environmental awareness among consumers and try to increase the level of pro-environmental behaviour of consumers who currently have low levels of such behaviour. The proposed study was conducted to study how packaging elements that influence consumers' behaviour during the different stages of purchase decision.

## 2. METHODOLOGY

Varanasi district was purposively selected for the study purpose. Multistage sampling technique was used and the sample size for the study was 100. The research design was exploratory-cum-descriptive. The study was exploratory in nature as few studies have been conducted in the area of prevalent packaging strategies with respect to food products especially in non-metro areas.

Also, an attempt had been made using descriptive statistics to see the relationship between the prevalent packaging strategies implemented by the marketers and the consumers' buying behaviour. The primary data has been collected with the help of a pre-structured schedule to gather the primary information of the respondents regarding demographic information, significance of packaging, consumers' perception about packaging strategies and impact of packaging strategies on purchase decision of consumers. The attitude of buyers was measured on the Likert scale.

## 3. RESULTS AND DISCUSSION

### 3.1 Consumers' Preference of Packaging Elements Based on Demographic Factors

The majority of the respondents belonged to age group of 20-30 years (40%), followed by 30-40 years (30%), 40-50 years (20%) and least were from 50 years and above (10%).

The mainstreams of respondents were post graduates i.e. 38%. 11% of the respondents were below graduation, 32% were graduates and 19% per cent were Ph.D. Since the study was conducted in BHU campus, most of the

respondents were post graduates and only 11% of respondents were educated below bachelor's level.

Accordingly, 20 percent of respondents earned Rs. 1 lakh whereas majority of respondents earned between 25,000 - 1 lakh. Only 10 percent of respondents earn less than Rs. 25,000.

Table 1 shows preference for packaging elements based on age. These elements were packaging colour, quality, design, Labelling & Information.

The perusal of the Table 1 shows that in the age group of 20-30 years majority i.e. 42.5% prefer packing colour (yellow, red, blue attract more) of the products. People belonging to age groups of 30-40 years prefer quality packaging which would help in storage of the food product for a long time i.e. 33.3% of the respondents. And respondents in the age groups of 40-50 years and above prefer the information of the product

printed on the package regarding price, expiry date, date of manufacturing i.e. 50% of the respondents.

Table 2 shows that respondents below graduation level i.e. 36.4% prefer packing quality for various food products. For products such as milk and juices, tetra pack is more preferable. People who are graduates and above prefer labelling & information about the products. For these people the labelling of the package, information about the product, its composition etc. matters the most.

Table 3 shows that respondents having income up to Rs 75,000 prefer the labelling on the package and product information. People having income above Rs 75,000 and above majorly prefer the package quality of food products. This showed that people with higher income are inclined towards the quality and appearance of the package as compared to people with less income. People with low salary and income prefer packaging and product information.

**Table 1. Preference for packaging elements based on 'Age' factor**

<b>Packaging elements</b>	<b>Age group (n=100)</b>			
	<b>20-30</b>	<b>30-40</b>	<b>40-50</b>	<b>50 &amp; above</b>
Packing colour	17 (42.5%)	4 (13.3%)	2 (10%)	0
Quality packing	4 (10%)	10 (33.3%)	5 (25%)	3 (30%)
Wrapper design & innovation	12 (30%)	7 (23.4%)	3 (15%)	2 (20%)
Labelling & information	7 (17.5%)	9 (30%)	10 (50%)	5 (50%)

**Table 2. Preference of packaging elements based on 'Education' Factor**

<b>Packaging elements</b>	<b>Educational qualification (n=100)</b>			
	<b>Below graduation</b>	<b>Graduation</b>	<b>Post-graduation</b>	<b>PhD</b>
Packing colour	2 (18.2%)	2 (6.25%)	3 (7.9%)	5 (26.3%)
Quality packing	4 (36.4%)	10 (31.25%)	10 (26.3%)	2 (10.5%)
Wrapper design and Innovation	3 (27.3%)	5 (15.625%)	5 (13.16%)	5 (26.3%)
Labelling & information	2 (18.2%)	15 (46.9%)	20 (52.6%)	7 (36.8%)
<b>TOTAL</b>	<b>11</b>	<b>32</b>	<b>38</b>	<b>19</b>

**Table 3. Preference of packaging elements based on 'Income' factor**

<b>Packaging elements</b>	<b>Income group (n=100)</b>				
	<b>Below 25,000</b>	<b>25,000-50,000</b>	<b>50,000-75,000</b>	<b>75,000-1,00,000</b>	<b>Above 1,00,000</b>
Packing colour	0	3 (15%)	8 (26.6%)	2 (10%)	3 (15%)
Quality packing	3 (30%)	5 (25%)	7 (23.4%)	8 (40%)	8 (40%)
Wrapper design and innovation	2 (20%)	5 (25%)	5 (16.7%)	5 (25%)	4 (20%)
Labelling and information	5 (50%)	7 (35%)	15 (50%)	5 (25%)	5 (25%)

### 3.2 Influence of Packaging Elements on Consumers' Buying Behaviour during the Different Stages of Purchase Decision

The questionnaire was developed based on visual and informational elements of food products packaging including five items of size, shape, colour, technology and information and these were rated on five-point scales from very important to no response at all at each end. Based on the questions, respondents were asked how these items of packaging would influence their different activities of purchase decision.

The perusal of the Table 4 revealed that informational elements of a food package are the most important elements at the pre-purchase stage when evaluating different alternatives. It appears that food product buyers pay attention to

packaging elements when they feel the need for a specific product.

The perusal of Table 5 indicates that packaging with reliance on information and visual elements plays the most important role in consumer purchase decision at this stage in comparison with the other stages. The food product buyers mostly pay attention to information written on food package when they are going to make their purchase decision.

The perusal of Table 6 indicates that both the packaging elements influence their future decision. As after purchasing a product, the package has two key roles in consumers' satisfaction or dissatisfaction. In addition, when consumers use the products they compare all the information written on the package with the actual product.

**Table 4. Importance (%) of packaging elements during pre-purchase stage**

S. no.	Degree of importance	Packaging elements		
		Particulars	Informational (%)	visual (%)
1.	'Very important'	35	20	
2.	Fairly important	25	27	
3.	Indifferent	20	15	
4.	Not so important	10	20	
5.	'Not at all important'	4	13	
6.	No response	6	5	

**Table 5. Importance of packaging elements during purchase stage**

S.no.	Degree of importance	Packaging elements		
		Particulars	Informational (%)	Visual (%)
1.	Very important	35	19	
2.	Fairly important	20	34	
3.	Indifferent	22	26	
4.	Not so important	14	13	
5.	'Not at all important'	4	8	
6.	No response	5	0	

**Table 6. Importance of packaging elements during post-purchase stage**

S. No.	Packaging elements		
	Degree of importance	Informational (%)	Visual (%)
1.	Very important	20	10
2.	Fairly important	30	15
3.	Indifferent	22	36
4.	Not so important	17	15
5.	'Not at all important'	8	18
6.	No response	3	6

The overall evaluation of the above criteria and in particular, the high values of both informational and visual elements of packaging suggests that consumers' are mostly concerned with essential properties and informational characteristics of product and pay considerably less attention to visual dimensions of the product such as packaging colour, shape & size. Properly delivered information on packaging generates strong impact on the consumers' buying behaviour. However, graphics and colour are relatively important.

### 3.3 Consumers' Perception about Prevalent Packaging Strategies of Food Products Followed by the Marketers

The consumer perception about packaging strategies has been measured on the basis of five statements ranging from strongly agree (SA) to strongly disagree (SD) on following 6 parameters: sachet packaging; communication & display factors, eco-friendly factors, convenient & reusable factor, innovative & attractive packaging factors and finally value for money.

Results are presented in Table 7 through Table 13.

From Table 7 it can be inferred that majority of respondents *strongly agree* with reference to statements I & II, whereas III maximum people have *disagreed* for statement 5, majority of respondents *agree* for statement IV and for statement V a large no. of people *strongly*

*disagree*. Overall, it could be inferred that people are favourable towards sachet packing as they are easy to handle and use and also costs less.

From Table 8 it could be inferred that majority of respondents *strongly agree* with reference to statements I & II but equal no. of people i.e. 20 *agree* as well as *disagree* for statement II, for statement III & IV maximum people *strongly agree* when environment and pollution issues are present.

From Table 9, it could be inferred that majority respondents *disagree* with reference to statements I, II & III and for statement IV maximum respondents *agree* when value pack is considered as value pack gives extra amount within the same price.

From Table 10 it could be concluded that majority respondents *strongly agree* with reference to statements I, II & V, majority people *disagree* with reference to statement III and with reference to statement IV maximum respondents *strongly disagree*.

From Table 11 it could be inferred that majority of respondents *agree* with reference to statement I which states that people are inclined towards the packaging which is more convenient to use. And maximum people *strongly disagree* with reference to statement II. But they are not willing to pay an extra price for convenience.

From the Table 12 it could be inferred that majority of respondents *strongly agree* with reference to the statement I, II & III.

**Table 7. Consumers' perception about 'Sachet' packaging strategy**

<b>Statements</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
I Sachets are easy to handle/use	78	20	0	2	0
II Sachet motivates a consumer to try various products	60	25	5	4	6
III Using sachets leads to less wastage of product	15	20	8	32	25
IV Use of sachet (very small packets) is increasing	20	28	5	25	22
V Usage of sachet is increasing because of its affordable/low price.	19	18	11	27	25

**Table 8. Consumers' perception about 'Eco-friendly' packaging strategy**

<b>S. no.</b>	<b>Statements</b>	<b>SA</b>	<b>A</b>	<b>N</b>	<b>D</b>	<b>SD</b>
I You prefer eco-friendly packaging	70	20	10	0	0	
II You prefer eco-friendly packaging even if you have to pay little extra	34	20	8	20	18	
III Packaging is creating more waste material	55	32	5	5	3	
IV It is creating more pollution in the environment	62	25	3	8	2	

**Table 9. Consumers' perception about 'value for money' packaging strategy**

S. no.	Statements	SA	A	N	D	SD
I	You prefer refill pack as its original packaging can be reused.	7	10	10	50	23
II	You prefer refill pack as it costs less	4	5	2	80	9
III	You buy a product because of the reusability of its package.	5	2	3	75	15
IV	You will purchase a product because of its value pack (big pack for less price)	40	34	1	19	6

**Table 10. Consumers' perception of 'attractive and innovative' packaging strategy**

S. no.	Statements	SA	A	N	D	SD
I	The use of very innovative and different kind of packaging is increasing.	35	40	8	10	7
II	Today, a consumer has more choices in terms of packaging options.	31	38	7	14	10
III	You buy a product (which you do not require) only because of its very attractive or different packaging.	21	23	4	30	22
IV	You will pay higher for good/attractive packaging	19	23	5	25	28
V	It enhances impulse purchase (purchasing Without thinking)	20	37	15	11	17

**Table 11. Consumers' perception about 'Convenient & Reusable' packaging strategy**

	Statements	SA	A	N	D	SD
I	You will buy a product because its packing makes the product usage more convenient.	25	62	3	6	4
II	After consumption of the product the packaging is used for decoration/storage purpose.	10	15	5	34	36

**Table 12. Consumers' perception about 'Communication and Display' packaging strategy**

S.no.	Statements	SA	A	N	D	SD
I	More attractive packaging image is displayed in the main areas of the shops.	50	23	5	10	12
II	Good packaging is taken as symbol of better quality product.	70	19	2	6	3
III	These days more information is written on the package.	79	17	2	2	0

**Table 13. Importance of various factors used for packaging strategy**

S. no.	Factors	Importance (%)
1.	Communication and display	5
2.	Convenient & reusable	16
3.	Attractive and innovative	12
4.	Value for money	27
5.	Sachet packing	18
6.	Eco-friendly packing	22

This perusal of Table 13 indicates the various factors used by marketers for their packaging strategy in order of their importance as perceived by the consumers' is as follows – value for

money (27%) eco-friendly packaging (22%), sachet packing (18%), convenience & reusability (16%), attractive & innovative packing(12%) and least is communication & display(5%).

#### 4. SUMMARY AND CONCLUSION

After the analysis and observations made regarding the significance of packaging, consumers' perception about prevalent packaging strategies and impact of packaging strategies on the purchase decision, the major deficiencies which have been identified are less packaging options to choose from, communication problems, limited eco-friendly packaging, low availability of economical packaging, misleading packaging etc.

The suggestions proposed to fill the gaps present in the market and bring about necessary improvements and in the packaging strategies are in-depth research before launching the product, the packaging should communicate effectively, focus on ethical packaging, increase in eco-friendly packaging, and more availability of economical packaging and lastly packaging should be designed to perform promotional role.

Gone are the days, when packaging was considered just a container or an outer covering, it has multiple roles to play now. As the consumer perceptions are changing, the marketers will have to provide them more user-friendly, eco-friendly, economical and innovative packaging options. The customers are becoming more aware and demanding so more packaging options have to be explored. The different packaging strategies have an impact on the purchase decision of the consumers. More effective the packaging strategies followed by the marketers, more is the market share of the product. Any package innovation that provides product security, integrity and ensures the product is uncontaminated is a winner. It is imperative that it fulfils a consumer need for product trust. The marketers will have to move one step ahead of the customers' requirements. The biggest challenge before them is to maintain a balance between providing

customers packaging options which satisfy them and taking care of the environment at a reasonable price.

The following cross sectional study is done with only few samples as the matter of prospect is very integrative in nature and need more time to avail. So in this particular study few sample sources are taken to ensure the following objective.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:

The peer review history for this paper can be accessed here:  
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